

18. Anthers blue; calyx in anthesis flattish. Flower light blue. Raceme dense, many-flowered. Capsules short-hemispheric.
 9b. *L. spicata*, var. *originalis*.
18. Anthers white. Calyx in anthesis roundish. Flowers dark purplish-blue. Raceme few (10-30)-flowered. Capsules globose, often somewhat inflated.
 9d. *L. spicata*, var. *campanulata*.
- (To be continued)

EIGHTH REPORT OF THE COMMITTEE ON PLANT DISTRIBUTION

The present report deals with the tribes *Oryzeae*, *Phalarideae*, *Agrostideae* and *Aveneae* of the family *Gramineae*, taken in the order of the seventh edition of Gray's Manual.

The data for these reports is compiled chiefly from the Gray Herbarium and the herbaria of the New England Botanical Club, the Connecticut Botanical Society, The Boston Society of Natural History, Yale University and Brown University, supplemented by such other sources as are, from time to time, accessible. In the present report the ranges of some recent segregates, particularly in the genus *Agrostis*, have been made up solely from the material in the first two collections mentioned; these ranges may be modified in some details when it becomes possible to consult other herbaria.

We are, as always, indebted to various members of the New England Botanical Club for cordially given aid, and in this instance especially to Mr. A. H. Norton of the Portland Society of Natural History for a carefully prepared list of stations for Maine grasses. We are also repeatedly indebted to the authorities of the various institutions mentioned above for the privilege of consulting the herbaria under their care.

PRELIMINARY LISTS OF NEW ENGLAND PLANTS— XXXIII.

The sign + indicates that an herbarium specimen has been seen; the sign — that a reliable printed record has been found.

	Me.	N.	H.	Vt.	Mass.	R. I.	Conn.
I. ORYZEAE							
<i>Leersia oryzoides</i> (L.) Sw.	+	+	+	+	+	+	+
<i>Leersia oryzoides</i> f. <i>glabra</i> A. A. Eaton. . .	+		+	+			

Me. N. H. Vt. Mass. R. I. Conn.

I. ORYZEAE—(Cont.)

Leersia oryzoides f. inclusa (Wiesb.) Dörfler.....		+	+	+	+	+
Leersia virginica Willd.....	+	+	+	+	+	+
Zizania aquatica L.....	+		+	+	+	+
Zizania aquatica var. angustifolia Hitchc.	+	+	+	—		+

II. PHALARIDEAE

Anthoxanthum aristatum Boiss.....	+	+		+		
Anthoxanthum odoratum L.....	+	+	+	+	+	+
Hierochloe alpina (Sw.) R. & S.....	+	+	+			
Hierochloe odorata (L.) Wahlenb.....	+	+	+	+	+	+
Hierochloe odorata f. Eamesii Fern.....						+
Phalaris arundinacea L.....	+	+	+	+	+	+
Phalaris arundinacea f. variegata (Parn.) Druce.....	+	+	+	+	+	+
Phalaris canariensis L.....	+	+	+	+	+	+

III. AGROSTIDEAE

Agrostis borealis Hartm.....	+	+	+			
Agrostis borealis f. macrantha (Eames) Fern.....					+	
Agrostis borealis var. americana (Scribn.) Fern.....	+	+				
Agrostis canina L.....	+			+	+	+
Agrostis elata (Pursh) Trin.....				+		
Agrostis hyemalis (Walt.) BSP.....				+	+	
Agrostis perennans (Walt.) Tuckerm.....	+	+	+	+	+	+
Agrostis perennans var. aestivalis Vasey..	+	+	+	+	+	+
Agrostis scabra Willd.....	+	+	+	+	+	+
Agrostis scabra f. Tuckermani Fern.....				+		
Agrostis spica-venti L.....	+		+	+		+
Agrostis stolonifera L.....	+	+	+	+	+	+
Agrostis stolonifera f. aristigera Fern.....					+	
Agrostis stolonifera var. compacta Hartm.	+	+	+	+	+	+
Agrostis tenuis Sibth.....	+	+	+	+	+	+
Agrostis tenuis f. aristata (Sincl.) Wieg...	+	+	+	+	+	+
Alopecurus aequalis Sobol.....	+	+	+	+		+
Alopecurus geniculatus L.....	+	+	—	+	+	+
Alopecurus myosuroides Huds.....				+	+	
Alopecurus pratensis L.....	+	+	+	+	+	+
Ammophila breviligulata Fern.....	+	+	—	+	+	+
Aristida basiramea Engelm.....	+	+				
Aristida dichotoma Michx.....	+	+	+	+	+	+
Aristida longespica Poir. var. geniculata (Raf.) Fern.....			+	+	+	+
Aristida oligantha Michx.....				+		
Aristida purpurascens Poir.....				+	+	+
Aristida tuberculosa Nutt.....				+		+
Brachyelytrum erectum (Schreb.) Beauv.	+	+	+	+	+	+
Calamagrostis canadensis (Michx.) Beauv.	+	+	+	+	+	+
Calamagrostis canadensis var. Macouniana (Vasey) Stebbins.....			+	+		+
Calamagrostis canadensis var. robusta Vasey.....	+	+	+			
Calamagrostis canadensis var. scabra (Presl) Hitchc.....			+	+		

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III. AGROSTIDEAE—(Cont.)

Calamagrostis cinnoides (Muhl.) Bart.....	+	+	-	+	+	+
Calamagrostis epigejos (L.) Roth var. georgica (Koch) Ledeb.....				+		
Calamagrostis inexpansa Gray var. novae- angliae Stebbins.....	+	+	+			
Calamagrostis inexpansa var. brevior (Vasey) Stebbins.....		+	+			
Calamagrostis neglecta (Ehrh.) G., M. & S.	+		-			
Calamagrostis perplexa Scribn.....	+					
Calamagrostis Pickeringii Gray.....		+	+	+		
Calamagrostis Pickeringii var. debilis (Kearney) F. & W.....	+	+		+		
Calamagrostis Pickeringii var. lacustris (Kearney) Hitchc.....		+	+			
Cinna arundinacea L.....	+	+	+	+	+	+
Cinna latifolia (Trev.) Griseb.....	+	+	+	+		+
Gastridium australe Beauv.....	+			+		
Heleochoa schoenoides (L.) Host.....				+		
Mibora minima (L.) Beauv.....				+		
Milium effusum L.....	+	+	+	+		+
Muhlenbergia capillaris (Lam.) Trin.....				+		+
Muhlenbergia foliosa (R. & S.) Trin.....	+	+	+	+	+	+
Muhlenbergia foliosa f. ambigua (Torr.) Wieg.....	+	+	+	+		+
Muhlenbergia foliosa var. setiglumis (Wats.) Scribn.....	+					
Muhlenbergia mexicana (L.) Trin.....	+	+	+	+	+	+
Muhlenbergia mexicana f. commutata (Scribn.) Wieg.....	+			+		+
Muhlenbergia racemosa (Michx.) BSP....	+	+	+	+	+	+
Muhlenbergia Richardsonis (Trin.) Rydb.	+					
Muhlenbergia Schreberi J. F. Gmel.....		+	+	+	+	+
Muhlenbergia sobolifera (Muhl.) Trin....		+	+	+	+	+
Muhlenbergia sobolifera f. setigera (Scribn.) Deam.....			+			
Muhlenbergia sylvatica Torr.....	+	+	-	+	+	+
Muhlenbergia tenuiflora (Willd.) BSP....		-	+	+	+	+
Muhlenbergia uniflora (Muhl.) Fern.....	+	+	+	+	+	+
Oryzopsis asperifolia Michx.....	+	+	+	+	+	+
Oryzopsis canadensis (Poir.) Torr.....	+	+		-		
Oryzopsis racemosa (Sm.) Ricker.....	+	+	+	+	+	+
Oryzopsis pungens (Torr.) Hitchc.....	+	+	+	+	+	+
Phleum alpinum L.....	+	+				
Phleum pratense L.....	+	+	+	+	+	+
Polypogon monspeliensis (L.) Desf.....	+	+		+		+
Sporobolus asper (Michx.) Kunth.....			-	+	+	+
Sporobolus clandestinus (Spreng.) Hitchc.						+
Sporobolus cryptandrus (Torr.) Gray....	+	+		+		+
Sporobolus heterolepis Gray.....						+
Sporobolus interruptus Vasey.....	+					
Sporobolus neglectus Nash.....	+	+	+	+		+
Sporobolus vaginiflorus (Torr.) Wood....	+	+	+	+	+	+
Sporobolus vaginiflorus var. inaequalis Fern.....	+	+	+	+		
Stipa avenacea L.....				+	+	+
Stipa comata Trin. & Rupr.....					+	

	Me.	N. H.	Vt.	Mass.	R. I.	Conn.
IV. AVENEAE						
<i>Aira caryophylla</i> L.....				+		
<i>Arrhenatherum elatius</i> (L.) Beauv.....	+	+	+	+	+	+
<i>Arrhenatherum elatius</i> var. <i>nodosum</i> (Reichenb.) Hubb.....				+		
<i>Arrhenatherum elatius</i> var. <i>nodosum</i> f. <i>striatum</i> Hubb.....				+		
<i>Avena fatua</i> L.....	+	-	+	+		+
<i>Avena hirsuta</i> Moench.....				+		
<i>Avena hybrida</i> Koch.....				+		
<i>Avena orientalis</i> Schreb.....				+		
<i>Avena pubescens</i> Huds.....			+			+
<i>Corynephorus canescens</i> (L.) Beauv.....				+		
<i>Danthonia compressa</i> Aust.....	+	+	+	+	+	+
<i>Danthonia spicata</i> (L.) Beauv.....	+	+	+	+	+	+
<i>Danthonia spicata</i> var. <i>longipila</i> Scribn. & Merr.....	+	+		+		
<i>Deschampsia atropurpurea</i> (L.) Beauv....	+	+	-			
<i>Deschampsia caespitosa</i> (L.) Beauv. var. <i>glauca</i> (Hartm.) Lindm.....	+	+	+	+		+
<i>Deschampsia caespitosa</i> var. <i>parviflora</i> (Thuill.) Richt.....	+			+		+
<i>Deschampsia elongata</i> Munro.....	+			+		
<i>Deschampsia flexuosa</i> (L.) Trin.....	+	+	+	+	+	+
<i>Holcus lanatus</i> L.....	+	+	+	+	+	+
<i>Koeleria cristata</i> (L.) Pers.....	+		+			
<i>Sphenopholis nitida</i> (Spreng.) Scribn.....				+	+	+
<i>Sphenopholis obtusata</i> (Michx.) Scribn....	+	+	+	+		+
<i>Sphenopholis obtusata</i> var. <i>lobata</i> (Trin.) Scribn.....	+			+		+
<i>Sphenopholis obtusata</i> var. <i>pubescens</i> (Scribn. & Merr.) Scribn.....						+
<i>Sphenopholis pallens</i> (Spreng.) Scribn.....	+	+	+	+		+
<i>Sphenopholis pallens</i> var. <i>major</i> (Torr.) Scribn.....	+	+	+	+		+
<i>Sphenopholis pennsylvanica</i> (L.) Hitchc....		-		+	+	+
<i>Trisetum melicoides</i> (Michx.) Vasey.....	+	+	+			
<i>Trisetum melicoides</i> var. <i>majus</i> (Gray) Hitchc.....	+		-			
<i>Trisetum flavescens</i> (L.) Beauv.....				+		
<i>Trisetum spicatum</i> (L.) Richter var. <i>molle</i> (Michx.) Beal.....	+	+	+	+		+
<i>Trisetum spicatum</i> var. <i>pilosiglume</i> Fern.....	+	+	+			

The report of *Danthonia sericea* from Easthampton, Massachusetts, in Stone's "Plants of Franklin, Hampshire and Hampden Counties" is, no doubt, erroneous. According to the determinations of Mr. Bayard Long, who has recently restudied the group, the New England specimens referred by St. John (RHODORA xix. 167) to *Alopecurus geniculatus*, var. *ramosus*, belong to the typical form of the species.

Anthoxanthum aristatum and *Alopecurus myosuroides* are older names for *A. Puelii* and *A. agrestis* respectively. For explanation of other names in the above list which are not to be found in Gray's

Manual, or whose application has been shifted, the following references may be consulted: Fassett, RHODORA xxvi. 153 (*Zizania*); A. A. Eaton, RHODORA v. 118, Dörfler, Herb. Norm. cent. lv, lvi. 164 (1915), and Fogg, RHODORA xxx. 84 (*Leersia*); House, N. Y. State Mus. Bull. ccliv. 87 (*Phalaris arundinacea*, f. *variegata*); Fernald, RHODORA xix. 152 (*Hierochloa*); Hitchcock, Cont. Nat. Herb. xxii. 538 and Fernald, RHODORA xxxv. 318 (*Aristida longespica*); Scribner, RHODORA ix. 17, Wiegand, RHODORA xxvi. 1, and Fernald, RHODORA xxvii. 11, Deam, Publ. Indiana Dept. Conserv. lxxxii. 163 (*Muhlenbergia*); Malte, Ann. Rep. Nat. Mus. Canada 1926. 105 and Fernald, RHODORA xxxv. 204 (*Agrostis*); Fernald, RHODORA xxxv. 108 (*Sporobolus*); Fernald, RHODORA xxvi. 196 and xxxii. 221 (*Alopecurus aequalis*); Stebbins, RHODORA xxxii. 35 (*Calamagrostis*); Hitchcock, Am. Journ. Bot. xxi. 135 (*Calamagrostis canadensis*, var. *scabra*); Fernald, RHODORA xxii. 71 (*Ammophila*); Fernald, RHODORA xviii. 195 (*Trisetum*); Fernald, RHODORA xxviii. 152 (*Deschampsia*); Hubbard, RHODORA xviii. 234 (*Arrhenatherum*); Scribner & Merrill, Circ. U. S. Dept. of Agric. xxx. 7 (*Danthonia spicata*, var. *longipila*).

Of the less common introduced species in our list, *Anthoxanthum aristatum* has been found at Randolph and Berlin, New Hampshire, at three stations in the vicinity of Boston, and on Martha's Vineyard; *Stipa comata* at Pawtucket, Rhode Island; *Heleochoa schoenoides* on made land at South Boston (*Rich*, 1888, and several later collectors); *Gastridium australe* at North Berwick, Maine, Lowell, Billerica and Boston, Massachusetts; *Mibora minima* at Plymouth, Massachusetts; *Calamagrostis epigejos*, var. *georgica* at Harwich and Gloucester, Massachusetts; *Aira caryophyllea* at Red Hill, New Hampshire and on Cape Cod and Nantucket; *Deschampsia elongata* and *Sporobolus interruptus* at North Berwick, Maine; *Koeleria cristata* at York, Maine, and Charlotte, Vermont; *Corynephorus canescens* at Edgartown, Martha's Vineyard (*Bicknell*); *Avena hirsuta* on dumps at South Boston; *A. hybrida* at Newburyport, Massachusetts (*Williams*); *A. orientalis* on Nantucket (*Churchill*); *A. pubescens* at Charlotte, Vermont, and Woodbury, Connecticut.

Trisetum flavescens is said to have been introduced with grass-seed in the Connecticut valley in Massachusetts (*Stone*) and has been found at Harwich, Massachusetts (*Fernald*).

Geographically, the groups here considered show no such preponderance of southern species as those treated in our preceding report

(RHODORA xxxi. 106-118). On the contrary, their ranges are rather evenly divided between northern and southern. Nor do they offer any taxonomic or nomenclatural difficulties comparable to those in the *Paniceae*. No new geographic groups are here recognized; the species considered fall into the following, used and defined in previous reports. As usual, varieties and forms which seem to have no geographic significance for our area are omitted.

I. GENERALLY DISTRIBUTED.—*Agrostis perennans* and var. *aestivalis*, *A. scabra*, *A. stolonifera*, *A. tenuis*, *Calamagrostis canadensis*, *Danthonia spicata*, *Deschampsia flexuosa*, *Leersia oryzoides*, *Muhlenbergia mexicana*, *M. racemosa*, *M. uniflora*, *Phalaris arundinacea*.

Of the species here included, *Muhlenbergia uniflora* is not reported from Nantucket or Martha's Vineyard. *Muhlenbergia racemosa* and *Phalaris arundinacea* are absent from extreme eastern Maine, occur on Cape Cod only in the western townships and are not known on Nantucket or Martha's Vineyard. No specimen of *Agrostis perennans*, var. *aestivalis* from Washington County, Maine, has been seen by us, though the variety occurs on Mt. Desert and Grand Manan. *Muhlenbergia mexicana* is not known from eastern Maine or near the coast east of the Kennebec and is distinctly rare northward; its range is transitional to group VII. The other species are of literally general distribution.

II. RATHER GENERAL EXCEPT IN SOUTHEASTERN MASSACHUSETTS.—*Alopecurus aequalis*, *Brachyelytrum erectum*, *Deschampsia cespitosa*, var. *glauca*, *Muhlenbergia foliosa*, *Oryzopsis asperifolia*, *Sphenopholis pallens*.

Sphenopholis pallens is not known from near the coast east of Casco Bay, nor has it been reported from Rhode Island. *Muhlenbergia foliosa* occurs at Crawford in eastern Maine; we have seen no specimens of it from any other point east of the Penobscot valley. *Alopecurus aequalis* occurs in Washington Co., Maine, but is not known to us near the coast from that point to southern New Hampshire, nor has it been found in Rhode Island. *Deschampsia cespitosa*, var. *glauca*, because of its riparian habitat, is somewhat local, but its general distribution would seem to place it in this group. It is absent from Rhode Island.

III. NORTHERN.—*A. Cinna latifolia*, *Trisetum spicatum*, var. *molle*, *B. Calamagrostis canadensis*, var. *robusta*, *C. inexpansa*, var. *novae-angliae*, *C. neglecta*, *Muhlenbergia foliosa*, var. *setiglumis*, *M. Richardsonis*, *Oryzopsis canadensis*, *Trisetum melicoides*.

Oryzopsis canadensis has a peculiar distribution—a single station on the upper St. John and several along the Maine coast and in the valleys of the Androscoggin and Saco. *Calamagrostis neglecta* and *Muhlenbergia Richardsonis* are known only from extreme northern Maine and from one more southern station each—Bethlehem, New Hampshire (*Pease*) for the former and Winslow, Maine (*Norton*) for the latter.

IV. Alpine or montane.—*Agrostis borealis*, *Calamagrostis canadensis*, var. *scabra*, *C. inexpansa*, var. *brevior*, *Deschampsia atropurpurea*, *Hierochloe alpina*, *Phleum alpinum*, *Trisetum spicatum*, var. *pilosiglume*.

V. RATHER GENERAL EXCEPT NORTHERN MAINE.—*Cinna arundinacea*, *Danthonia compressa*, *Oryzopsis pungens*.

None of the above species reaches Washington County, Maine. *Danthonia compressa* is unreported near the Maine coast; inland it extends to Moosehead Lake and the vicinity of Millinocket. It is not known from Nantucket or Martha's Vineyard. *Cinna arundinacea* and *Oryzopsis pungens* are also absent from northern New Hampshire and much of northern Vermont. As usual, through such ranges, this group grades off gradually into group VII.

VI. NEITHER NORTHERN MAINE NOR SOUTHEASTERN MASSACHUSETTS.—(a) *Muhlenbergia sylvatica*; (b) *Leersia virginica*, *Oryzopsis racemosa*.

No very definite lines can be drawn among groups V, VI and VII. The ranges of the species here put into the first two are alike in that they have too many stations in Vermont and New Hampshire (at least in the lowlands of those states) to be properly placed in group VII; but in Maine they show much variation and could be divided into a number of gradually receding subgroups. Thus, the members of what might be called group A are general in Maine south of the 45th parallel and often have outlying stations to the north of it. *Juniperus communis*, var. *depressa* is an example. Those of group B, though reaching Washington County, are not on the coast east of the Kennebec; *Athyrium thelypteroides*, for instance. C does not extend east of the Penobscot or Mt. Desert (*Ophioglossum vulgatum*). D, in addition, is absent from the vicinity of the coast east of the Kennebec and tends to become generally more local (*Andropogon furcatus*). Species of E are rare anywhere in Maine, but do reach, at least at scattered stations, as far as the Kennebec valley. Similarly, group VII shows large variation within its limits, as the discussions in this and other reports show.

The three groups here recognized are, then, admittedly loose and somewhat arbitrary; perhaps, for the greatest accuracy, a considerable series of such minor groups as those outlined above ought to be distinguished. We have hesitated to do so until we had accumulated more data than the few reports so far prepared have given us. The larger groups we have used are predicated on the geographic importance of the well-marked floras of southeastern Massachusetts and of the St. John and Aroostook valleys in northern Maine and on the tendency of a large number of species to stop, northward, at about the northern boundary of Massachusetts. *Oryzopsis racemosa* is placed in group VI rather than in VII because of the comparatively large number of stations for it in Vermont and New Hampshire and because of its occurrence in the Kennebec valley; *Leersia virginica*, almost wholly because of its stations along the Kennebec. The distinction between its range and that of *Sporobolus vaginiflorus* is not great; it does appear to us the most practicable we can make.

VII. Chiefly the three southern states.—*Aristida dichotoma*, *A. longespica*, var. *geniculata*, *A. purpurascens*, *Calamagrostis cinnoides*, *Muhlenbergia capillaris*, *M. Schreberi*, *M. sobolifera*, *Sphenopholis nitida*, *S. obtusata*, *S. pensylvanica*, *Sporobolus asper*, *S. vaginiflorus*, *Stipa avenacea*.

Of the above species, *Aristida dichotoma*, *Muhlenbergia sobolifera*, *M. Schreberi*, *M. tenuiflora*, and *Sporobolus vaginiflorus* reach southern New Hampshire and the Champlain valley. Only the first and last are found on Cape Cod; both also touch southwestern Maine. *Calamagrostis cinnoides* and *Sphenopholis obtusata* likewise have extensions to southwestern Maine, but do not occur in the west as far north as Berkshire County, Massachusetts. The latter is also absent from Cape Cod. Of the species confined to the southern states, or practically so, *Sphenopholis pensylvanica*, *Aristida purpurascens* and *A. longespica*, var. *geniculata* occur on Cape Cod, but not in Berkshire County. *S. nitida* is found in Berkshire County, but not on Cape Cod. The others occur in neither area. *Stipa avenacea* is found chiefly near the coast.

VIII. CALCICOLOUS (northern).—*Milium effusum*.

IX. MARITIME.—*Ammophila breviligulata*, *Aristida tuberculosa*, *Sporobolus cryptandrus*.

X. MISCELLANEOUS.—*Agrostis elata*, *A. hyemalis*, *A. stolonifera*, var. *compacta*, *Aristida basiramea*, *Calamagrostis perplexa*, *C. Picker-*

ingii, *Danthonia spicata*, var. *longipila*, *Hierochloe odorata*, *Sporobolus clandestinus*, *S. neglectus*, *S. vaginiflorus*, var. *inaequalis*, *Zizania aquatica* and var. *angustifolia*.

Agrostis hyemalis (*A. antecedens* Bickn.) has a coastal plain distribution in the eastern United States, but in the Mississippi Basin extends north to Illinois and west to Kansas and Oklahoma. *A. stolonifera*, var. *compacta* is most common along the coast, but has various scattered stations inland, particularly in Maine. *Calamagrostis Pickeringii* is confined to two small areas, in the White Mountain region of New Hampshire and the lower Merrimac valley in that state and in Massachusetts. *Hierochloe odorata* combines, curiously, a maritime with a calcicolous range; it could pass as generally distributed except for its absence from large acid-soil areas in central and western Massachusetts and southern New Hampshire. *Sporobolus neglectus* occurs in the calcareous region of western New England, close to the boundary, from the Champlain valley to southern Connecticut, and at an isolated station in the valley of the Aroostook River in Maine. *Sporobolus vaginiflorus*, var. *inaequalis* is almost wholly confined between the northern boundary of Massachusetts and the forty-fifth parallel, a range very like that of *Alisma Plantago-aquatica*. *Zizania aquatica*, var. *angustifolia* has a similar distribution, but pushes farther north in the Penobscot valley. Typical *Z. aquatica* is found chiefly along the lower Kennebec, in eastern Massachusetts, in the lower Connecticut valley and in the Champlain valley. The other species here placed have too few and scattered stations to be classified.

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VERBENA PROSTRATA AN INVALID NAME.—Not long ago, as I was glancing casually over a bibliography of Professor Gaetano Savi, the following item attracted my attention:

Verbena prostrata. Memorie della Società Italiana. T. IX, p. 349, 7 Settembre 1801.

(Questa specie presentemente porta il nome di *Verbena bracteosa* statogli dato dal Michaux nel 1803.)

Verbena prostrata Savi was a new name to me. It is not listed in the Kew Index and I had not found it while working on A Revision